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Map-based assessment of older adults' life space: validity and reliability

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Map-based tools have recently found their way into health-related research. They can potentially be used to quantify older adults' life-space. This study aimed to evaluate the validity (vs. GPS) and the test-retest reliability of a map-based life-space assessment (MBA).; Life-space of one full week was assessed by GPS and by MBA. MBA was repeated after approximately 3 weeks. Distance-related (mean and maximum distance from home) and area-related (convex hull, standard deviational ellipse) life-space indicators were calculated. Intraclass correlations (MBA vs. GPS and test-retest) were calculated in addition to Bland-Altman analyses (MBA vs. GPS).; Fifty-eight older adults (mean age 74, standard deviation 5.5 years; 39.7% women) participated in the study. Bland-Altman analyses showed the highest agreement between methods for the maximum distance from home. Intraclass correlation coefficients ranged between 0.19 (95% confidence interval 0 to 0.47) for convex hull and 0.72 (95% confidence interval 0.52 to 0.84) for maximum distance from home. Intraclass correlation coefficients for test-retest reliability ranged between 0.04 (95% confidence interval 0 to 0.30) for convex hull and 0.43 (95% confidence interval 0.19 to 0.62) for mean distance from home.; While acceptable validity and reliability were found for the distance-related life-space parameters, MBA cannot be recommended for the assessment of area-related life-space parameters.
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